

ABSTRACT

A wing structure for hang gliders, ultralites, gliders, heavy aircraft, ornithopters and sailsoaring flying boats which has a first wing set that pivots on two axis, and a second wing set that remains substantially immobile relative to the fuselage or keel. The wing pivots on the lateral axis of the fuselage or keel by moving along a slider assembly that allows it to move from a swept position to a more perpendicular position relative to the keel to control the amount of lift. The wing also pivots on the longitudinal axis of the fuselage or keel to control banking. On hang glider versions of the device, optional ducted fan, propeller, or jet propulsion units provide power to maintain flight. An optional bungee launch assembly assists takeoff from relatively flat surfaces. An optional "telepresence" wing controller allows the pilot to control wing motion with minimal physical exertion. Optional landing gear are controlled by wing position, such that the landing gear are lowered when the wings are in the forward takeoff/landing position and raised when the wings are in the swept flight position.